Headquarters Resource Management Plan
for
Sustainable Harvest

2002-2003

FOREST
RENEWAL BC

October 5, 2001

BRITISH
COLUMBIA

Table of Contents

Table of Contents ii

Introduction 1

Headquarters Resource Management Planning 1

SH and FRBC Strategic Objectives 1

HRMP SH Planning Process 2

Summary 2

Appendix 1 – Planning Team 3

HRMP Team for Sustainable Harvest 3

Appendix 2 – SH Templates 4

Knowledge Issues and Strategies Templates #1 and #2 4

Appendix 3 – Reviewer Comments 23

Sustainable Harvest Reviewer Comments 23

Appendix 4 – Technical Peer Review 25

HRMP Peer Review - Sustainable Harvest 25

Introduction

Resource management planning was introduced in 1998 as a way to link resource management objectives with investment making decision and project selection. The Headquarters Resource Management Plan (HRMP) is the equivalent of the regionally developed Resource Management Plan (RMP).

The HRMP is an inter-agency plan for identifying resource management issues under each Forest Renewal BC Strategic Objective (SO) that is provincial in nature or that support activities in the region.

Headquarters Resource Management Planning

The HRMP Process follows the "spirit and intent" of the SSFM RMP Guidelines. That is, for each Strategic Objective a set of issues, and where applicable a number of sub-issues, were identified which, when resolved based on a well-defined strategy, achieve or contribute to the achievement of the SO's performance measure.

For upcoming fiscal 2002-03, the Sustainable Harvest (SH) planning team (Appendix 1) for the Headquarters Resource Management Plan (HRMP) recommends SH investments to address the key provincial level Issues. This document provides context and rationale for these Issues. Readers interested in going directly to the SH Issues and Strategies are directed to the SH Templates (Appendix 2). On Forest Renewal BC (FRBC) approval of the proposed Issues and Strategies, the planning team will develop details of the required activities.

Forest Renewal BC is committed to an open and transparent planning process. As such, several reviewers from Ministry, Academia and the private sector were selected to provide input and feedback regarding the Headquarters Resource Management Plan for this component. This involved reviewing and commenting on the "Template 1" - Issues and "Template 2" - Strategies. Reviewers were asked to comment on the Issues (Template 1) and Strategies (Template 2) as to their objectives, eligibility and need. The comments and input can be found in Appendix 3.

SH and FRBC Strategic Objectives

Sustainable Harvest is one of the six FRBC Strategic Objectives that strive to improve forest management decision making, grow more high-value timber, restore the environment, and enhance the value-added sector (visit *http://www.forestrenewal.bc.ca/*). In addition to SH, the other Strategic Objectives are:

- Enhance Environmental Values
- Strengthening Sustainable Forest Management
- Strengthen and Expand the Value Added Sector
- Stimulate Workforce Development to Strengthen the Forest Sector
- Sustain and Diversify Forest Community Economies

Specifically, Forest Renewal BC investments in SH will assist:

> *"... in the production of faster-growing, higher-quality stands of second-growth timber".*

The five-year strategic SH target:

> *"Forest Renewal BC investments to improve timber volume will increase the timber available for potential harvest by 25 million m^3".*

HRMP SH Planning Process

The 2002-03 HRMP SH planning process was an inter-agency, collaborative effort of staff from

- Ministry of Forests
- Ministry of Water, Air and Land Protection

The SH HRMP planning process began in June 2001 and comprised team meetings to identify the Key SH Issues. Several issues were identified and leaders were identified to document issues. One main issue was subsequently developed from the initial meeting.

The SH planning team provided input on several iterations of the Issues and Strategies templates before a wider technical peer review by agencies and SSFM stakeholders (Appendix 4). Following the technical review, the SH template information was modified to reflect peer review comments and suggestions.

Documents guiding the headquarters planning process included:

- HRMP Guidelines
- HRMP/HIP Ground Rules
- 2002/03 Resource Management Plan Guidelines
- 2001/02 Resource Management Plan

Summary

To the best of the component leader's ability, comments were rationalized and incorporated into the Template submissions. In general, the comments received fell into one of three categories as follows:

- **editorial** – required wording change
- **required specific change** – specific wording or additional ideas were incorporated
- **required no change** – comments of general nature which required no change

Not all of the editorial comments have been documented (such as editorial or those that required no change) but have been addressed where required. Based on the reviewers' comments, templates have been reviewed and revised.

Appendix 1 – Planning Team

HRMP Team for Sustainable Harvest

Name	Agency	Branch/ Section
Mike Fenger	MWLAP	Habitat Branch
Bob Konkin	FRBC	Forest And Environment Investment Group
Micheal Leeson	MWLAP	Habitat Branch
Pat Martin	MoF	Forest Practices, Silviculture Practices Section
John McClarnon	MoF	Forest Practices, Silviculture Practices Section
Ralph Winter	MoF	Forest Practices, Silviculture Practices Section
Colene Wood	MWLAP	Habitat Branch

FRBC Forest Renewal BC
MoF Ministry of Forests
WLAP Ministry of Water, Land and Air Protection

Appendix 2 – SH Templates

Knowledge Issues and Strategies Templates #1 and #2

TEMPLATE 1: HRMP SH Issue

SH Issue #: 1	Title: Ensure wise deployment of the Enhanced Forestry Program

Overview Description of the Provincial Level Strategic Issue:

Support infrastructure is required for the EFP (i.e., provincial strategy and coordination, policy, procedures, guidelines, standards, performance measures, extension, expert advice, monitoring and evaluation) to help ensure that EFP investments are effective and efficient.

To ensure that all of the strategic and operational issues identified in the Auditor General's report on EFP-funded silviculture programs are addressed.

Relationship to Sustainable Harvest:

i. The maintenance of environmental values

- Without the support of up-to-date policies, guidelines, procedures, and expert advice, Forest Renewal partners prescribing and conducting EFP-funded treatments are unlikely to make the greatest possible contribution to reducing risk and uncertainty around the maintenance of environmental values.

ii. The sustainable use of timber resources

- Without program support, FRBC investments in silviculture (through the EFP) are unlikely to make their greatest potential contribution to reducing risk and uncertainty around the sustainable use of timber resources.

iii. The sustainable use of non-timber resources

- Without program support, FRBC investments in silviculture (through the EFP), are unlikely to make their greatest potential contribution to reducing risk and uncertainty around the sustainable use of non-timber resources. Up-to-date policies, guidelines, procedures, and expert advice, are required to assist the Forest Renewal partners that are prescribing and conducting EFP-funded treatments.

Relationship to Strategic Resource Plans and Decisions:

i. How will resolving this issue impact the resolving of the Provincial Issue

- By providing support for the EFP, silviculture investments can be better planned, implemented and monitored. TSR decisions may be improved through improved knowledge of the location and extent of treatment opportunities and the degree to which treatments can mitigate future timber supply shortfalls.

ii. How will resolving this issue affect regional implementation of the EEV program?

- EFP treatments undertaken within every management unit in the province rely on provincially-supplied support services and materials such as documented procedures for planning, implementing and monitoring treatments. Without these materials and support services, EFP investments cannot be well planned, and the treatment programs in individual management

units will be less effective and efficient. FRBC will have much less security that EFP investments are achieving maximum benefits.
Cross Reference to Management Unit Issues (if applicable): • This issue – the need for ongoing support for EFP-funded treatments – has been identified at the RMP level, the level of individual management units and by individual MYA holders.

TEMPLATE 2: HRMP SH Issue Strategies

SH Issue #: 1	Title: Ensure wise deployment of the Enhanced Forestry Program

Overview Description of the Knowledge Strategy:

The knowledge strategy involves a combination of the use of existing information and the acquisition of new information.

Status of Existing Knowledge:

The status of existing knowledge in this area is as follows:

i. Organization, synthesis and analysis:

- basic tools and analysis capabilities exist to support the EFP. We have the capacity to incorporate new information into decision-support tools and guidelines.

ii. Data Management:

- The data required to provide strategic guidance, analysis, coordination and support for the EFP varies in quality and completeness throughout the province and across sites, stands, and treatments.

iii. Extension:

- In those cases where it exists, the information necessary to plan, implement, and monitor EFP investments is distributed in a variety of documents and sources.

iv. Research:

- Much of the existing research into stand response to treatment and the new inventories can be utilised.

v. Monitoring:

- Several monitoring projects relevant to the EFP generally - and the EFP strategic plans, in particular – have been conducted.

Describe the Required Knowledge-Building Activities in these Areas (as applicable):

Organization, Synthesis, Analysis:

- Organization and synthesis of new FRBC-funded research to create consolidated decision-support tools and guidelines.

Data Management:

- Provide the standardized survey and data collection procedures and data storage, retrieval, and summary capabilities (ISIS).

Extension:

- Undertake (and encourage others to undertake) extension activities that develop the capability of forest managers to develop, implement and monitor the outcomes of silviculture treatments.

Research:

- Encourage research activities that improve our ability to plan, implement, and evaluate EFP treatments.

- Identify key weaknesses in tools and knowledge and provide this feedback to SSFM project teams.

Monitoring:

- Contribute to developing monitoring procedures/programs that will provide feedback essential to monitor the implementation and effectiveness of silviculture activities.

Define Performance Indicators, Targets & Milestones:

- Provide provincial strategy, coordination, and program support including migrating SMP requirements and silviculture strategies into a Sustainable Management Plan
- Maintain and improve performance measures and report on their achievement including develop a new performance indicator for habitat/biodiversity
- Maintain and improve existing, and provide new, procedures, guidelines, and standards for EFP activities including update the pruning quality inspection procedures
- Provide "best practices" operational information to support Forest Renewal partners
- Provide expert advice, extension services, and training to support the EFP treatments implemented by Forest Renewal partners through contacts with over 400 people/year
- Provide monitoring and evaluation services including i) developing procedures to check whether stand conditions match growth and yield model predictions within 10%, and ii) an evaluation of habitat/biodiversity issues in stand management prescriptions

Describe Relationship to Other SSFM Knowledge Strategies (if applicable):

Cross Reference to Management Unit Activities (when complete):

TEMPLATE 1: HRMP SH Issue

Strategic Objective: *Sustainable Harvest*	
Issue #: 2	**Title: Increasing the Area and Productivity of the Forest Land Base** (Backlog Reforestation / Site Restoration / Problem Forest Types / Broadleaf Management)
Sub-issue #	**Title:**

Overview Description of the Provincial Level Issue:

Sustainable harvest objectives related to this issue are:

- Increase the amount of land available for commercial timber production.
- Support more-informed silviculture investment decisions.
- The Backlog Program increases the province's productive land base to help sustain the Allowable Annual Cut. Forest Renewal BC is helping to reforest the remaining 96,000 hectares of treatable not satisfactorily restocked Crown forest lands that were harvested prior to October 1, 1987. With proper reforestation these backlog areas will provide future harvest opportunities that may enable the province to reach a higher sustainable level of harvest. As the backlog NSR diminishes, the program focus is shifting towards ensuring that the reforested areas are managed to produce free growing stands. Approximately 2.4 million hectares are currently classified as restocked but not free growing. Estimates of the completion date for bringing all backlog areas to free growing ranges from 2015 to 2025.
- Site restoration of non-productive roads and landings, utilization and treatment of problem forest types, and hardwood management also represent significant opportunities to increase the timber harvesting landbase.

Statement of issue:

Increase the area and productivity of thetimber harvestign land base through reforesting backlog denuded areas.. Maintain existing investments to sustain and increase futuretimber supplies, by implementing, monitoring and reporting on safe, cost effective, biologically appropriate treatments that maintain or enhance key environmental values.

Relationship to Strategic Level Objective:

i. *The maintenance of environmental values*

Bringing land back into the timber harvesting land base may help offset yield reductions associated with actions required to protect other resource values. Through appropriate treatments of backlog areas and NP roads and landings, a range in forest structure, consistent with the range of natural variability can be recreated. A hardwood management program could make significant contributions to enhancing biodiversity.

ii. *The sustainable use of timber resources*

The backlog program ensures that backlog areas are managed to a standard consistent with yield assumptions in the timber supply review. Failure to manage backlog areas to free growing could impact the long-term timber supply and undermine sustainability of timber flow. Restoration of NP areas and the treatment of problem forest types will increase the timber harvesting land base.

iii. *The sustainable use of non-timber resources*

. Reforestation of backlog areas / landings promotes hydrological recovery, slope

stabilization, and recovery of scenic values.

Relationship to Strategic Resource Plans and Decisions:

i. *Strategic Decisions*

The backlog program supports the base case TSR assumptions. Restoration of NP and treatment of problem forest types can increase the timber harvesting land base and help to offset downward pressures. The combined effect of these treatments is to improve access to timber while maintaining environmental values

ii. *Resource Plans*

Will ensure implementation of cost effective biologically sound treatments, conducted safely, that will maintain other resource values.

Cross Reference to other Provincial or Regional Issue or sub-issue (if applicable):

Cariboo :

1. Ingress on Roads and Landings- Assess the ability and impact of ingress and rehabilitation strategies to offset loss of the forest land base from roads and landings. (SSFM)
2. Maintaining sustainable harvest levels in the Quesnel, Williams Lake and 100 Mile House TSAs is more a matter of timber quantity than quality, with the main priority being increasing the available timber supply.

Kamloops:

Regionally the priority for SH is on satisfactorily stocking Backlog sites and bringing as many hectares as feasible to free-growing status by 2004. However, each management unit has differing needs and priorities in regards to meeting and contributing to attainment of the key objective and strategies.

1. Completion of backlog reforestation by 2004 remains top priority in all TSA's and this includes the surveys and reclassification of stocked stands as well as treatments to achieve free growing status.
2. The goal is to have backlog and incremental reforestation done by 2004 including reclassifying and/or restocking all backlog NSR. This goal may not be attainable but all backlog reforestation is deemed a high priority.

Nelson:

Second priority is to address achievement of regional FRBC performance measure targets and the provincial SH target of by March 2002, for backlog sites;

1. Accurately identify and categorize all stands as NSR, SR or NP.
2. Put under prescription all NSR sites that will be treated to bring them to SR.

Prince Rupert:

Lakes District priorities, within FRBC's SH Program, are the six priorities of the Type I silviculture strategy which include the Stand Tending, Backlog Reforestation, Site Restoration and Forest Health Enhancement FRBC Objectives.

The Morice District priorities are as follows: Basic Silviculture--to maintain current AAC/Backlog NSR--to maintain current AAC/Habitat Supply/Stand Tending Activities--to maintain timber quality.

Bulkley-Cassiar Forest District: Silviculture investment priorities are based on the Landscape Planning hierarchy followed by the Stand Planning hierarchy. Moreover, the Stand Planning

hierarchy prioritizes obligations at an operational planning level. The stand planning hierarchy in the Bulkley TSA is: Basic Silviculture / Backlog Silviculture / Silviculture Strategy to Reduce Fall Down / Incremental Silviculture /Silviculture Strategy for Non-Merchantable Timber Types.

Kispiox Forest District: Aggressive treatment of backlog land continues to be a district priority, and is reflected in the silviculture portion of the RMP. Enhanced silviculture treatments hold high to medium priority inasmuch as there are benefits to be realized in the TSR. However, it is important to not divert investment and effort from backlog initiatives to fulfill enhanced forestry strategies. Treating backlog NSR sites with uniform stocking and protecting plantation investments provides greater return on investments than incremental activities.

Kalum Forest District: The top SH objective is backlog brushing. Planting backlog NSR is the second and third priority. Conifer release is number four.

Vancouver

High Priority

Backlog Reforestation Program

- Backlog – legal obligation (areas under a silviculture prescription and the treatment such as planting or site preparation has commenced; fill planting,
- Backlog – protecting backlog investment e.g. appropriate surveys or brushing impeded (stocked but not free growing) areas.

TEMPLATE 2: HRMP SH Issue Strategies

Issue #: 2	Title: Increasing the Area and Productivity of the Forest Land Base (Backlog Reforestation / Site Restoration / Problem Forest Types / Broadleaf Management)
Sub-issue #	TITLE:

Overview Description of the Issue Strategy:

The strategy involves more effective use of existing information combined with collection of new information.

Status of Existing Knowledge:

The status of existing knowledge is as follows:

i. *Organization, synthesis and analysis:*
The first version of the backlog cost guidelines were implemented this year based on existing data from site preparation and vegetation management trials. The annual backlog report is primarily generated from ISIS data. The strategic 5-year plan is generated from the RMP, IMS, and ISIS data. The work of the Hardwood and Vegetation Management Technical Advisory Committee could be built on to develop a renewed hardwood initiative. Protocols are in place for sheep health inspections. The equipment and expertise is in place for spray calibration. A problem forest type report has been prepared but requires periodic updating to reflect new AAC decisions.

ii. *Data Management:*
The ISIS, RMP, and IMS data are reasonably accurate for the backlog reporting requirements. Data related to conifer response to vegetation management treatments to support the backlog cost guidelines requires strengthening. Permanent monitoring plots on rehabilitated roads and landings to support TSR assumptions are very limited. TSR data is used to prepare and update the problem forest type report.

iii. *Research:*
The FRDA 1 site preparation trials, vegetation management research, work on understory light levels, TASS, and VDYP curves have been incorporated into the backlog cost guidelines. Studies have been done to identify sheep health concerns. Background research to support site restoration practices and hardwood management is available.

iv. *Adaptive Management:*
The headquarters strategy primarily focuses on support, assessment and reporting on program implementation and proposes to continue to do so,

iv. *Effectiveness Evaluation:*
Audits have been done of backlog treatments. The backlog cost guidelines provide a tool for supporting cost and biologically effective investment. Reports assess progress and goal accomplishment.

v. *Extension:*
Published reports, tour guides, journal publications, excel worksheets with user documentation packages, workshops.

Describe the Required Activities in these Areas (as applicable):

- Enhance and evaluate backlog cost guidelines
- Maintain backlog reporting / strategic planning functions
- Maintain sheep health monitoring

- Maintain spray calibration
- Investigate ways to increase acceptability of herbicides
- Review policies and procedures related to approval of PMPs and PUPs
- Continue extension work to support strategy objectives
- Implement site restoration monitoring plots and database
- Keep problem forest type report current
- Develop hardwood management strategies

Define Performance Indicators, Targets & Milestones:

- Enhance and evaluate backlog cost guidelines – Revised guidelines
- Maintain backlog reporting / strategic planning functions – 2002 Backlog Report. Updated 5-Year Plan.
- Maintain sheep health monitoring – Annual inspections
- Maintain spray calibration – Annual calibrations.
- Investigate ways to increase acceptability of herbicides – list of new initiatives ready to undertake that gain public and agency support for using herbicides
- Review policies and procedures related to approval of PMPs and PUPs – completion of a proposal that would streamline legislation, policy, board mandates and procedures to reduce cost and time required to obtain PUPs and PMPs.
- Continue extension work to support strategy objectives- Backlog treatment workshops.
- Implement site restoration monitoring plots and database- Monitoring plots and database.
- Keep problem forest type report current -Updated report.
- *Seral Plant Community Descriptions for Correlated Vegetation Guidelines in BC – Descriptions of seral plant communities.*
- Develop hardwood management strategies –Renewed provincial strategy

Describe Relationship to Other Strategies (if applicable):

Planning and prioritization of the backlog program is linked into the forest-level analyses for silviculture investments in all management units, which is linked to the RMP process. Problem forest types, site restoration, and a hardwood management program would also be incorporate into this process.

Cross Reference Activities to other strategies as applicable:

Template 1. HRMP SH Issue

SH Issue #:3	**Title:** Sustainability of non-timber values and resources **Treatments to manage (i.e., maintain, recruit, restore or enhance) second growth forests for wildlife, biodiversity and other non-timber values and sustain current or future timber harvest levels.**

Overview of the Provincial Level Strategic Issue:

- Understanding and documenting the impacts of timber harvesting and post-harvesting decisions/investments on non-timber values is a social responsibility.
- Increasing timber values and volumes are explicit goals of the investments in SH. Implicit in these goals is also the need to sustain the ecosystems that support timber and non-timber values. A coordinated and strategic provincial approach is considered most effective to provide leadership, through supplying information on sustaining non-timber values to regional implementators.

Relationship to Sustainable Harvest Objective:

Issue #1.3 relates to reducing risk or uncertainty regarding:

1) **Maintenance of environmental values**

- Information on **sustainability or risk to non-timber values should be integral to determining silviculture investments and future forest policy**; viable and acceptable timber supply analysis and environmental accounting processes need to be developed. There is a risk that public and professional criticism will increase if the process is not based on sound ecological principles
- The **lack of adequate information on non-timber values** can potentially cause poor investment decisions, with poor or less return on the investment. It can also lead to global criticism of our stewardship policies that protect non timber resource values.

2) Sustainable use of timber resources

- The **timber supply is more secure** when it can be demonstrated that non-timber (all resource values) values are being sustainably and concurrently managed. Information regarding harvesting and silviculture is currently focused on ways to increase timber volume, and to a lesser degree on increasing timber value and sustaining non-timber values. Presentation of information to decision-makers is needed, about risks associated with maximizing timber supply without simultaneously and equally addressing the sustainability of environmental values.
- Sustaining environmental values and non-timber values are a major public concern when providing rights to harvest timber. Since there is a high degree of **public ownership** in British Columbia, the right to continue to harvest timber from public lands depends to some extent on our **accountability** for non-timber values at the time harvesting decisions are made or reviewed.
- Current initiatives for **certification** are being fuelled by the need for clear **accountability for non-timber values,** which demonstrates responsible environmental practices to consumers.

3) Sustainable use of non-timber resources

- Non-timber values include marketable values such as water, fisheries, botanical forest products, wildlife recreation opportunities, and non-market values such as ecosystem integrity, which can be measured and reported through use of **environmental indicators** (e.g., species at risk trends, ecosystem condition, etc.). Such accounting needs to be incorporated into decision-making processes.
- **Forecasts of the trends of non-timber values** related to management decisions are central to

demonstrating timber supply sustainability.

Relationship to Strategic Resource Plans and Decisions:

Resolving this issue will help resolve provincial issues because:

- **Supportable decisions** that increase or maintain timber harvest levels, and the need for clear and consistent presentation of non-timber value forecasts at the management unit level, should, demonstrate sustainability of non-timber resources, indicate ways to reduce risk, and change investment and harvest decisions.
- The **systematic analysis of non-timber resources**, and its integration within the current timber harvesting decision framework, will lead to increased understanding of the uncertainties around both timber and non-timber resource management. Efforts can be placed on areas or factors that have the greatest uncertainty, so that in the time between harvest decisions, activities and or investments can be planned that reduce risk and uncertainty, resulting in a more effective return on investment. (Under the current Code structure, I do not see a direct link between these supposed risks and uncertainties and harvest decisions in relations to the types of treatments possible under this program. In any case, there are distinct limitations put on the SDM in regards to rejecting proposed cutblocks. Modifications to proposals can be made a requirement (changes in cutblock size, shape, timing of harvest, silvicultural system), but protection of areas is not an option unless designated under one of the provisions in the code (WHA, UWR, Sensitive area etc). This section needs to be rewritten to reflect that which is possible under legislation. Efforts instead should focus on changing forest policy (legislation, government policy)
- **Future efforts will be more focussed** within each management unit, and investment decisions and review of forestry practices between harvest decisions will be more streamlined. (I don't' see how this will streamline harvest decisions since the influence of these supposed risks and uncertainties is minimal at best) Incrementally, forestry practices and the impacts will be more clearly understood. Measures to mitigate the impacts can be implemented can be made known on how to reduce risks while continuing to harvest timber at current or increased levels. (Biggest impact will be on modifying forest policy)

Fulfilling this knowledge gap improves the up-coming TSR decisions because:

Analysis of non-timber values would be included in TSA and TFL timber supply review reports and be subject to public review and comment. The rationale statement issued with AAC determinations would account for risk and uncertainty of non-timber as well as timber resources within the limits set out in current forest policies (ie legislation and government policy).

Resolving this issue will affect implementation of the SH program because:

- **New opportunities** to maintain/increase the available timber supply and maintain/increase non-timber values will be evident, providing a better return on investment.
- SH can be shown to be accountable for environmental values while achieving its goal of increasing available timber supply levels, and **investments and treatments will be supported by a broader spectrum of concerned stakeholders**.

Cross Reference to SH Issue #1 and Management Units Issues

- There will need to be areview ofregional RMPs for 2002/03 when these are available. If there are significant gaps in addressing non-timber values at a strategic or management unit level, further strategies may be needed at the provincial level to assist regions to address the gaps.
- This issue affects SH Issue #1: Forest Level Strategic Planning/Decision Support. Type 1 and 2 silviculture strategies and regional investments where timber forecasts did not initially

address non-timber values adequately, and they will need to be revised to reflect the increased opportunities identified above.

TEMPLATE 2: HRMP SH Issue Strategies

SH Issue #: 3	**Title:** Sustainability of environmental values and resources **Treatments to manage (i.e., maintain, recruit, restore or enhance) second growth forests for wildlife, habitat and biodiversity, and sustain current or future timber harvest levels.**

Overview Description of the Knowledge Strategy:
To sustain environmental values together with timber values requires knowledge of past, current and future conditions, so that decisions at the stand, landscape and forest estate levels are adequately informed and accountable to sustaining these values. Scientifically based best available knowledge, information on forested ecosystems about potential impacts of timber harvesting, and how to change these through silviculture investment decisions is the basis for sustaining environmental values.

Status of Existing Knowledge:

i. *Organization, synthesis and analysis:*

- The major organizations (Ministry of Forests and forest industry) which are responsible for timber harvesting decisions lack certain knowledge and understanding of the potential environmental impacts of some decisions. There is a need to fill this knowledge gap, and provide decision support tools to improve these and other forest management decisions.
- A methodology has been developed for conducting environmental analysis.
- There is a variety of decision support tools available, but access to the tools and knowledge of the appropriateness of the tools is insufficient.
- The strategic need and priority for further development of decision support tools will be determined by March 2002.
- There is a lack of demonstrated methodologies for incorporating environmental analysis in timber supply decisions. (The code has provisions for wildlife and biodiversity. To go beyond those provisions such that it impacts timber supply would require cabinet approval of a HLP or changes to the Chief Foresters policy for Landscape Unit Planning. The Chief Forester can not incorporate new strategies to protect non timber resources into TSR that would increase the impacts beyond that which has already been determined (IWMS, UWR, Landscape Unit Planning)).

ii. *Data Management:*

- A large quantity of information and knowledge exists on environmental values that is not routinely used in harvest and silviculture decisions, however, access to this information and the knowledge of what and how to use it is limited. Of interest is whether values can be sustained at various harvest levels and with various practices. The environmental analysis data will be part of the review of harvest decisions and silviculture investment decisions. (there is no provision for this to have any significant impact on harvest decisions other than timing, block size or shape or silvicultural system used. WHAs, UWR, sensitive areas and other Code designations as well as making certain specific forest resources and features known are the only methods of modifying harvest decisions. These are generally not in the harvest/no harvest category and have minimal impacts on timber supply.)

iii. *Extension:*

- Ministries and industry decision-makers are the primary clients for environmental analysis products and processes. Much of the information necessary to understand the consequences of different decisions, e.g., silviculture investments, is distributed in a variety of documents and sources. The use and application of existing information, along with new information on support tools (e.g., habitat supply models) needs to be packaged and communicated in the context of the user and use for which the information should apply. In addition, extension of general knowledge of environmental values is also needed to the forestry community and concerned public.

iv. *Research:*

- Some research specific to forecasting environmental values has been completed, including the assignment of risk levels related to timber harvesting. The 2001/02 Habitat Modelling Strategy will identify the current research gaps related to decision support. *Monitoring:*
- A methodology for effectiveness monitoring of silviculture activities has been developed; further extension and training is needed.
- Methods and procedures for monitoring environmental trends have been developed, however, specific application to the effectiveness of timber supply and harvesting decisions is lacking. (not sure what is meant by 'effectiveness of timber supply and harvesting decisions'. The TSR can not account for more than is allowed under the Code. Any new information must first influence policy makers).
- The means to fund ongoing environmental monitoring within forest land is not secure, and contributes to a general lack of good data on trends.

Describe the Required Knowledge-Building Activities in these Areas (as applicable):

Organization, Synthesis, Analysis:

- Environmental analyses are needed for each management unit in the province (TSA and TFL), as well as for producing regional and provincial summaries. Analyses are needed to guide silviculture investments and inform harvesting level decisions. (I do not believe there can be a direct link between harvest level decisions and environmental analysis. Social decisions have already been made in regards to protection of non timber resources and are articulated in the Code, Chief Forester Policies and HLPs. What can be done is effectiveness audits and review of those policies) Priorities for conducting these analyses need to be determined.
- Maintenance of environmental values can only be judged when there is a level of understanding in support of these values. With operational analysis of values it will possible to integrate measures to sustain these timber supply decisions, silviculture and investment. (Same concerns as stated above) The public will know values are addressed and be assured that these values are factored into decisions in a systematic and accountable way.

Data Management:

- Encourage SSFM activities that aim at improving the quality, completeness, and ease-of-use of forest resource inventory data that is important to developing strategic level analysis needed to do environmental assessments and analyses (i.e., to predict habitat supply and trends of environmental values). Encourage SSFM activities that aim at improving assessments of environmental risk related to forestry. (Sounds like effectiveness audits on the Code? Isn't this a government requirement? Methodology needs to be developed but implemented by government.)

- Of interest is whether specific environmental values can be sustained at various harvest levels and with various practices. The environmental analysis data will be part of the documentation silviculture investment decisions, that will support such decisions as amount and type of silviculture activities, etc. (first comes a process to evaluate, next comes evaluation by government ministries, then comes changes in policy and lastly comes changes in AAC determinations. Silv investments are somewhere in between these).

Extension:

- In management units where significant environmental risks are identified, work to reduce these risks through a better understanding of how to apply alternative decisions and treatments. Address problems routinely identified in management unit assessments within a more strategic context. (where this is limited to how to use silvicultural treatments to enhance habitat where it has been lost, or minimize future impacts on timber supply such as replacing WHAs or UWR, then this fits).

Research:

- Further best available, scientifically based research into environmental indicators and sustaining environmental values is needed to support forecasts on impacts and risks to the environment.
- Encourage research activities that improve our ability to simulate the impact of alternative management activities on environmental values.

Monitoring:

- Trend monitoring is used to help identify areas where there are existing concerns regarding harvest decisions; appropriate methods need to be developed related to environmental values.
- Monitoring the impacts of harvest decisions under current policy on environmental values can contribute to improvements in forest policy and AAC determinations.
- Where significant risk are identified, ensure that monitoring of the indicators is undertaken to more closely monitor actual trends based on better data and more detailed assessment where needed and work to establish a restoration of environmental values where assessments indicate this is warranted.
- Monitoring the effectiveness of silviculture activities needs to be initiated and continued, to build support for funding and implementation of silviculture strategies and plans.
- Monitoring of experimental silviculture treatments will help expand our species knowledge and vegetative response to new practices (what is "species knowledge"?)

Define Performance Indicators, Targets & Milestones:

Performance Indicators with targets

- Timber supply decisions in the highest priority management units include an environmental analysis by 2005 (highest priority management units to be determined by December 2002)???
- Silviculture Strategies for the highest priority management units (priorities to be determined by March 2002) include habitat supply analysis by 2003
- Silviculture investment decisions (i.e., Resource Management Plans and Regional Investment Plans) reflect the priorities for habitat supply and biodiversity in all regions by 2004
- Effectiveness Monitoring Plans completed for all regions (forest policy and silviculture decisions) by 2004

Describe Relationship to Other SSFM Knowledge Strategies (if applicable):

Developing and applying environmental analysis to provide information on harvesting level decisions (only to the degree that it can legally influence TSRs or forest policy)and silvicultural investments will be done under SH. SSFM is expected to provide improved and available data, as well as develop and provide information on indicators and other measures of sustainability.

Cross Reference to Management Unit Activities (when complete):

Environmental assessment pilots have been undertaken in the Robson Valley TSA and the Arrow TSA, with industry partners, to include environmental analyses in the timber supply review process. Some silviculture strategies have incorporated habitat data into the analyses, however, habitat supply analysis will only be completed for 4 management units in 2001/02, to develop some methodologies.

TEMPLATE 1: HRMP SH Issue

SH Issue #: 4	**Title:** Strategic plans to guide silviculture investments

Overview Description of the Provincial Level Strategic Issue:

In the review of FRBC Silviculture Programs, the Auditor General identified a critical need to better plan silviculture investments to ensure that expenditures were achieving strategic objectives.

Relationship to Sustainable Harvest:

i. *The maintenance of environmental values*

To insure that FRBC investments in silviculture make their greatest possible contribution to reducing risk and uncertainty around the maintenance of environmental values, strategic guidance for silvicultural activities is required. Silviculture investment strategies will provide regional co-ordination and contribute to cost-effective treatments.

ii. *The sustainable use of timber resources*

Strategic guidance for silviculture activities is required so that FRBC investments in silviculture achieve their greatest potential contribution to reducing risk and uncertainty around the sustainable use of timber resources.

iii. *The sustainable use of non-timber resources*

Strategic guidance for silviculture activities is required so that FRBC investments in silviculture achieve their greatest potential contribution to reducing risk and uncertainty around the sustainable use of timber resources and provide indications of good stewardship to the global public.

Relationship to Strategic Resource Plans and Decisions:

i. *How will resolving this issue impact the resolving of the Provincial Issue?*

If silviculture investments can be better planned, TSR decisions may be improved as well as future timber supplies through improved knowledge of the location and extent of treatment opportunities, and the degree to which treatments can mitigate future timber supply shortfalls.

ii. *How will resolving this issue affect regional implementation of the EEV program?*

If silviculture investments can be better planned, the treatment programs in individual management units will be more effective and efficient. FRBC will have greater security that their investments are achieving maximum benefits. A baseline will exist to better allocate funding. Long Term social risk will be reduced through effective planning of second growth forests.

Cross Reference to Management Unit Issues (if applicable):

This issue – the need to better plan silviculture investments – has been identified at the RMP level, the level of individual management units and by individual MYA holders.

TEMPLATE 2: HRMP SH Issue Strategies

SH Issue #: 4	Title: *Strategic plans to guide silviculture investments*

Overview Description of the Knowledge Strategy:

- *The knowledge strategy involves a combination of the use of existing information and the acquisition of new information.*

Status of Existing Knowledge:

The status of existing knowledge is as follows:

i. *Organization, synthesis and analysis:*

- Basic analysis capability exists to better plan silviculture investments.

ii. *Data Management:*

- The quality and completeness of forest resource inventory data varies throughout the province. The accuracy of estimates of treatment response varies greatly over the many site-stand-treatment combinations in the province.

iii. *Extension:*

- Much of the information necessary to better plan silviculture investments is distributed in a variety of documents and sources.

iv. *Research:*

- Much of the existing research into stand response to treatment can be utilised.

v. *Monitoring:*

- Several monitoring projects relevant to the EFP generally - and the EFP strategic plans, in particular – have been conducted. Other important projects are under development this year.

Describe the Required Knowledge-Building Activities in these Areas (as applicable):

Organization, Synthesis, Analysis:

- In each management unit in the province, (and regionally and provincially), develop a strategic plan to guide silviculture investments.

Data Management:

- Encourage SSFM activities that aim at improving the quality, completeness, and ease-of-use of that forest resource inventory data that is important to developing strategic silviculture plans. Encourage SSFM activities that aim at improving estimates of response to treatment and ability to forecast stand development after treatment.

Extension:

- Undertake (and encourage others to undertake) extension activities that develop the capability of forest managers to develop, implement and monitor strategic silviculture plans.

Research:

- Encourage research activities that improve our ability to simulate the impact of alternative silviculture programs, predict response to treatment, and obtain and compile inventory data.

Monitoring:

- Contribute to developing monitoring procedures/programs that will provide feedback essential to monitor the implementation and effectiveness of strategic silviculture plans – and silviculture activities in general.

Define Performance Indicators, Targets & Milestones:

- A rudimentary strategy (Type 1 strategy) for each management unit in the province by March 31, 2002.
- Advanced strategies (Type 2 strategy) for 23 management units by March 31, 2002.
- Regional strategies by March 31, 2003
- Updated provincial strategy by March 31, 2004.

Describe Relationship to Other SSFM Knowledge Strategies (if applicable):

Cross Reference to Management Unit Activities (when complete):

Appendix 3 – Reviewer Comments

Sustainable Harvest Reviewer Comments

Below are the comments received for the Sustainable Harvest component Templates 1 and 2.

My comments are inserted in the various documents.

Most of my concerns relate to the work done on sustainable environmental values. While I strongly support any work towards determining the effectiveness of forest policy (legislation and government policies) in regards to protecting environmental values, I do not believe such works (models, new theories etc) can have a direct impact on timber supplies or most harvest decisions. The Chief Forester has already indicated he can not incorporate information such as that which was provided on the spotted owl prior to cabinets approval of the recovery plan, into a timber supply review where it will have a timber supply impact beyond that which has been built into the Code. His determination in this case was appealed but the CF decision was upheld. Those decisions are social decisions which can only be made through a HLP approved by cabinet.

As for SDM determinations on operational plans, again there are limits as to what can be incorporated into the decision making process. It would be difficult to reject a proposed cutblock outright if it complies with the Code (green-up, cutblock size), and is outside of any designations for the area (WHA, UWR, Sensitive Area etc.). Modifications to proposed cutblocks can be required to accommodate other forest resources and features but this would likely be a change in block size or layout, timing of harvest or silvicultural system. Again anything more significant than that either requires a designation under the Code or direction from a HLP.

While the work proposed is fine, the rationale to support it must be changed as I have attempted to do.

In the backlog program, I suggest one of the priorities be a review of the use of herbicides and a study of how it can be improved upon. We need to garner more support for it's use as part of Pesticide Management Plans that incorporate First Nations concerns and wildlife foraging strategies and as well, we have to modify the approval and appeals process. The appeals process needs a major review. It has all but eliminated this tool on the coast.

We've conducted a very cursory review and forward the following comments:

1. SH Isssue #1 Template #2
   - define "Best Practices" or are you referring to an "Adaptive Mgmt process"??
   - Data Mgmt - how is data mgmt controlled and utilized in regards to Provincial Initiatives underway ie. Inconsada?? Need proper staff and resources to manage effectively

2. SH Issue 2 Template #1
   - missing Prince Rupert cross-reference for North Coast Forest District, other PRFR districts issues addressed.

The other items in the document around objectives, eligibility, and need appear OK.

Thank you for the opportunity to comment on the HRMP. I am not sure I am qualified to do so but here are some comments for you to consider:

General Comment:

We are having trouble at the regional level getting staff involved in SH because of low staffing resources and the fact that they continue to focus on preservation of old growth as opposed to second growth management. With that in mind, I am looking towards HQ to assist with delivery of projects particularly with suggesting and monitoring of projects. Therefore I consider providing regional support a key component of your HRMP, one that should be included in all of your issues/knowledge strategies.

Specific Comments:

Wise Deployment Issue & Strategy

This issue comes across as being vague. It almost seems to be more of non-activity specific tasks that should occur as part of more clearly defined issues?

Backlog Issue & Strategy

It was my understanding that FRBC was directing their investments away from backlog projects? This issue is a good one and should remain if eligible.

Sustainability of non-timber values and resources

Some typos noted in BLOCK LETTERS in the attached. This is a very important component of the RMP. We are still having trouble convincing licensees that enhancing non-timber resources is worthwhile in many situations. We need clearly described examples of why they should attempt these treatments. ie: Put it in terms of $ or access to otherwise constrained timber.

Strategic Plans to guide silviculture investments

Typo: Change Insure to Ensure in Relationship to Sustainable Harvest (i). These are fine but the obstacles remain at the regional level where we do not have people identifying actual projects that are consistent with the strategies.

Appendix 4 – Technical Peer Review

Below are three lists of reviewers for the SH component. Those who responded are also identified.

HRMP Peer Review - Sustainable Harvest

Name	Affiliation	Response
Becky Bings	WLAP (Cariboo Region)	
Paul Jeakins	Consultant (Nelson)	
Doug Morrison	WLAP (VI Region)	
Randy Chan	Tolko	
Gerry Fox	WLAP (Nelson)	
Mike Younie	WLAP (Lower Mainland)	Yes
Greg Anderson	MoF (Invermere)	
Jeff Beale	Slocan/LP	Yes
Judy Teskey	WLAP (VI Region)	
T H Jones		
Neil Endacott	MoF	Yes
Les Herring	MoF	
Bruce Fraser	MoF	
Hal Reveley	MoF	Yes

MoF Ministry of Forests
WLAP Ministry of Water, Land and Air Protection